Appendix E

Noise Modeling Outputs

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Traffic Noise Modeling Calculations - Summary

Project: **12287.01 - SCWD LCDR EIR**

Number	Name	Segment Description and Location From	To	Existing	Existing + Project	Δ Existing – Existing + Project	
Summary of Net Changes							
1	Empire Grade Rd	South of Chinquapin Rd		49.7	49.8	0.14	

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Model Calculations

Project: 12287.01 - SCWD LCDR EIR

Noise Level Descriptor: Ldn
Site Conditions: Soft
Traffic Input: ADT
Traffic K-Factor: 10

Segment Description and Location			Input										Output				
					Distance to Directional Centerline, (feet)[4]		Traffic Distribution Characteristics						Ldn,	Distance to Contour, (feet)[3]			
Number	Name	Segment	ADT	Speed (mph)	Near	Far	% Auto	% Med	% Hvy	% Day	% Eve	% Night	(dBA)[5,6,7]	70 dBA	65 dBA	60 dBA	55 dBA
Existing Conditions																	
1	Empire Grade Rd	South of Chinquapin Rd	2,327	25	100	100	99.0%	1.0%	0.0%	80.0%		20.0%	49.7	4	10	21	44

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Model Calculations

Project: 12287.01 - SCWD LCDR EIR

Noise Level Descriptor: Ldn
Site Conditions: Soft
Traffic Input: ADT
Traffic K-Factor: 10

	Segment Description and Location		Input										Output				
					Distance to Directional Centerline, (feet)[4]		Traffic Distribution Characteristics						Ldn,	Distance to Contour, (feet)[3]			
Number	Name	Segment	ADT	Speed (mph)	Near	Far	% Auto	% Med	% Hvy	% Day	% Eve	% Night	(dBA)[5,6,7]	70 dBA	65 dBA	60 dBA	55 dBA
Existing + Project Conditions																	
1	Empire Grade Rd	South of Chinquapin Rd	2,401	25	100	100	99.0%	1.0%	0.0%	80.0%		20.0%	49.8	5	10	21	45

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Project-Generated Construction Source Noise Prediction Model
Laguna Creek Diversion Retrofit - Phase 1, Site Preparation

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold*	410	60.0
Threshold*	107	75.0
Nearest Receiving PL	114	74.4
	100	75.8
	200	68.0
	250	65.5
	300	63.5
	350	61.7
	400	60.2
	450	58.9
	500	57.7
	550	56.7

Equipment Assumptions	Qty.	Reference Emission Noise Levels (Lmax) at 50 feet[1]	Usage Factor[1]
Excavator	**1**	85	0.4
Tractor	**1**	84	0.4

Ground Type	Soft
Source Height	5
Receiver Height	5
Ground Factor	0.58

Predicted Noise Level[2]	L_{eq} dBA at 50 feet[2]
Excavator	81.0
Tractor	80.0

Predicted Combined Noise Level (L_{eq} dBA at 50 feet)
83.6

Sources:
1 - Obtained from the FHWA Roadway Construction Noise Model, January 2006.
2 - Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006.
L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)
Where: E.L. = Emission Level;
U.F.= Usage Factor;
G = Constant that accounts for topography and ground effects; and
D = Distance from source to receiver.
*Project specific threshold

Project-Generated Construction Source Noise Prediction Model
Laguna Creek Diversion Retrofit - Phase 1, Grading

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold*	325	60.0
Threshold*	85.5	75.0
Nearest Receiving PL	114	71.8
	100	73.2
	150	68.7
	200	65.5
	250	63.0
	300	60.9
	350	59.2
	400	57.7
	450	56.4
	500	55.2

Equipment Assumptions	Qty.	Reference Emission Noise Levels (Lmax) at 50 feet[1]	Usage Factor[1]
Grader	1	85	0.4
Ground Type		Soft	
Source Height		5	
Receiver Height		5	
Ground Factor		0.58	

Predicted Noise Level[2]	L_{eq} dBA at 50 feet[2]
Grader	81.0

Predicted Combined Noise Level (L_{eq} dBA at 50 feet)
81.0

Sources:
1 - Obtained from the FHWA Roadway Construction Noise Model, January 2006.
2 - Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006.
L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)
Where: E.L. = Emission Level;
U.F.= Usage Factor;
G = Constant that accounts for topography and ground effects; and
D = Distance from source to receiver.
*Project specific threshold

Project-Generated Construction Source Noise Prediction Model
Laguna Creek Diversion Retrofit - Phase 2, Cofferdam Installation

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold*	298	60.0
Threshold*	78	75.0
Nearest Receiving PL	114	70.8
	100	72.2
	150	67.7
	200	64.5
	250	62.0
	300	59.9
	350	58.2
	400	56.7
	450	55.4
	500	54.2

Equipment Assumptions	Qty.	Reference Emission Noise Levels (Lmax) at 50 feet[1]	Usage Factor[1]
Tractor	**1**	84	0.4
Ground Type		Soft	
Source Height		5	
Receiver Height		5	
Ground Factor		0.58	

Predicted Noise Level[2]	L_{eq} dBA at 50 feet[2]
Tractor	80.0

Predicted Combined Noise Level (L_{eq} dBA at 50 feet)
80.0

Sources:
1 - Obtained from the FHWA Roadway Construction Noise Model, January 2006.
2 - Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006.
L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)
Where: E.L. = Emission Level;
U.F.= Usage Factor;
G = Constant that accounts for topography and ground effects; and
D = Distance from source to receiver.
*Project specific threshold

Project-Generated Construction Source Noise Prediction Model
Laguna Creek Diversion Retrofit - Phase 2, Pipe Installation

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold*	425	60.0
Threshold*	112	75.0
Nearest Receiving PL	114	74.8
	100	76.2
	150	71.7
	200	68.5
	250	66.0
	300	63.9
	350	62.2
	400	60.7
	450	59.4
	500	58.2

Equipment Assumptions	Qty.	Reference Emission Noise Levels (Lmax) at 50 feet[1]	Usage Factor[1]
Excavator	**1**	85	0.4
Pumps	**1**	77	0.5
Tractor	**1**	84	0.4

Ground Type	Soft
Source Height	5
Receiver Height	5
Ground Factor	0.58

Predicted Noise Level[2]	L_{eq} dBA at 50 feet[2]
Excavator	81.0
Pumps	74.0
Tractor	80.0

Predicted Combined Noise Level (L_{eq} dBA at 50 feet)
84.0

Sources:
1 - Obtained from the FHWA Roadway Construction Noise Model, January 2006.
2 - Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006.
L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)
Where: E.L. = Emission Level;
U.F.= Usage Factor;
G = Constant that accounts for topography and ground effects; and
D = Distance from source to receiver.
*Project specific threshold

Project-Generated Construction Source Noise Prediction Model
Laguna Creek Diversion Retrofit - Phase 3, Coanda Screen, Preparation and Concrete

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold*	442	60.0
Threshold*	116	75.0
Nearest Receiving PL	114	75.2
	100	76.7
	150	72.1
	200	68.9
	250	66.4
	300	64.4
	350	62.6
	400	61.1
	450	59.8
	500	58.6

Equipment Assumptions	Qty.	Reference Emission Noise Levels (Lmax) at 50 feet[1]	Usage Factor[1]
Excavator	**1**	85	0.4
Concrete Mixer Truck	**1**	85	0.4
Pumps	**1**	77	0.5

Ground Type	Soft
Source Height	5
Receiver Height	5
Ground Factor	0.58

Predicted Noise Level[2]	L_{eq} dBA at 50 feet[2]
Excavator	81.0
Concrete Mixer Truck	81.0
Pumps	74.0

Predicted Combined Noise Level (L_{eq} dBA at 50 feet)
84.4

Sources:
1 - Obtained from the FHWA Roadway Construction Noise Model, January 2006.
2 - Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006.
L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)
Where: E.L. = Emission Level;
U.F.= Usage Factor;
G = Constant that accounts for topography and ground effects; and
D = Distance from source to receiver.
*Project specific threshold

Project-Generated Construction Source Noise Prediction Model
Laguna Creek Diversion Retrofit - Phase 3, Coanda Screen, Diversion Pipeline

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold*	545	60.0
Threshold*	143	75.0
Nearest Receiving PL	114	77.6
	100	79.0
	150	74.5
	200	71.3
	250	68.8
	300	66.7
	350	65.0
	400	63.5
	450	62.2
	500	61.0

Equipment Assumptions	Qty.	Reference Emission Noise Levels (Lmax) at 50 feet[1]	Usage Factor[1]
Concrete Saw	**1**	90	0.2
Excavator	**1**	85	0.4
Gradall	**1**	85	0.4
Pumps	**1**	77	0.5

Ground Type	Soft
Source Height	5
Receiver Height	5
Ground Factor	0.58

Predicted Noise Level[2]	L_{eq} dBA at 50 feet[2]
Concrete Saw	83.0
Excavator	81.0
Gradall	81.0
Pumps	74.0

Predicted Combined Noise Level (L_{eq} dBA at 50 feet)
86.8

Sources:
1 - Obtained from the FHWA Roadway Construction Noise Model, January 2006.
2 - Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006.
L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)
Where: E.L. = Emission Level;
U.F.= Usage Factor;
G = Constant that accounts for topography and ground effects; and
D = Distance from source to receiver.
*Project specific threshold

Project-Generated Construction Source Noise Prediction Model
Laguna Creek Diversion Retrofit - Phase 3, Coanda Screen, Backfill Structure

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold*	470	60.0
Threshold*	123	75.0
Nearest Receiving PL	114	75.9
	100	77.4
	150	72.8
	200	69.6
	250	67.1
	300	65.1
	350	63.3
	400	61.8
	450	60.5
	500	59.3

Equipment Assumptions	Qty.	Reference Emission Noise Levels (Lmax) at 50 feet[1]	Usage Factor[1]
Concrete Mixer Truck	**1**	85	0.4
Concrete Saw	**1**	90	0.2

Ground Type	Soft
Source Height	5
Receiver Height	5
Ground Factor	0.58

Predicted Noise Level[2]	L_{eq} dBA at 50 feet[2]
Concrete Mixer Truck	81.0
Concrete Saw	83.0

Predicted Combined Noise Level (L_{eq} dBA at 50 feet)
85.1

Sources:
1 - Obtained from the FHWA Roadway Construction Noise Model, January 2006.
2 - Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006.
L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)
Where: E.L. = Emission Level;
U.F.= Usage Factor;
G = Constant that accounts for topography and ground effects; and
D = Distance from source to receiver.
*Project specific threshold

Project-Generated Construction Source Noise Prediction Model
Laguna Creek Diversion Retrofit - Phase 3, Coanda Screen, Pipe installation

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold*	520	60.0
Threshold*	137	75.0
Nearest Receiving PL	114	77.1
	100	78.5
	150	74.0
	200	70.8
	250	68.3
	300	66.2
	350	64.5
	400	63.0
	450	61.7
	500	60.5

Equipment Assumptions	Qty.	Reference Emission Noise Levels (Lmax) at 50 feet[1]	Usage Factor[1]
Concrete Saw	**1**	90	0.2
Excavator	**1**	85	0.4
Tractor	**1**	84	0.4

Ground Type	Soft
Source Height	5
Receiver Height	5
Ground Factor	0.58

Predicted Noise Level [2]	L_{eq} dBA at 50 feet[2]
Concrete Saw	83.0
Excavator	81.0
Tractor	80.0

Predicted Combined Noise Level (L_{eq} dBA at 50 feet)
86.3

Sources:
1 - Obtained from the FHWA Roadway Construction Noise Model, January 2006.
2 - Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006.
L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)
Where: E.L. = Emission Level;
U.F.= Usage Factor;
G = Constant that accounts for topography and ground effects; and
D = Distance from source to receiver.
*Project specific threshold

Project-Generated Construction Source Noise Prediction Model
Laguna Creek Diversion Retrofit - Phase 4, Modify existing intake and valves

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold*	543	60.0
Threshold*	142	75.0
Nearest Receiving PL	114	77.5
	100	78.9
	150	74.4
	200	71.2
	250	68.7
	300	66.6
	350	64.9
	400	63.4
	450	62.1
	500	60.9

Equipment Assumptions	Qty.	Reference Emission Noise Levels (Lmax) at 50 feet[1]	Usage Factor[1]
Pumps	**2**	77	0.5
Generator	**4**	82	0.5
Tractor	**1**	84	0.4
Welder / Torch	**1**	73	0.05

Ground Type	Soft
Source Height	5
Receiver Height	5
Ground Factor	0.58

Predicted Noise Level [2]	L_{eq} dBA at 50 feet[2]
Pumps	77.0
Generator	85.0
Tractor	80.0
Welder / Torch	60.0

Predicted Combined Noise Level (L_{eq} dBA at 50 feet)
86.7

Sources:
1 - Obtained from the FHWA Roadway Construction Noise Model, January 2006.
2 - Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006.
L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)
Where: E.L. = Emission Level;
U.F.= Usage Factor;
G = Constant that accounts for topography and ground effects; and
D = Distance from source to receiver.
*Project specific threshold

Project-Generated Construction Source Noise Prediction Model
Laguna Creek Diversion Retrofit - Phase 5, Vault Installation, Excavation

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold*	410	60.0
Threshold*	107	75.0
Nearest Receiving PL	114	74.4
	100	75.8
	150	71.2
	200	68.0
	250	65.5
	300	63.5
	350	61.7
	400	60.2
	450	58.9
	500	57.7

Equipment Assumptions	Qty.	Reference Emission Noise Levels (Lmax) at 50 feet[1]	Usage Factor[1]
Excavator	**1**	85	0.4
Tractor	**1**	84	0.4

Ground Type	Soft
Source Height	5
Receiver Height	5
Ground Factor	0.58

Predicted Noise Level[2]	L_{eq} dBA at 50 feet[2]
Excavator	81.0
Tractor	80.0

Predicted Combined Noise Level (L_{eq} dBA at 50 feet)
83.6

Sources:
1 - Obtained from the FHWA Roadway Construction Noise Model, January 2006.
2 - Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006.
L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)
Where: E.L. = Emission Level;
U.F.= Usage Factor;
G = Constant that accounts for topography and ground effects; and
D = Distance from source to receiver.
*Project specific threshold

Project-Generated Construction Source Noise Prediction Model
Laguna Creek Diversion Retrofit - Phase 5, Vault Installation, Anchoring

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold*	227	60.0
Threshold*	60	75.0
Nearest Receiving PL	114	67.8
	100	69.2
	150	64.7
	200	61.5
	250	59.0
	300	56.9
	350	55.2
	400	53.7
	450	52.4
	500	51.2

Equipment Assumptions	Qty.	Reference Emission Noise Levels (Lmax) at 50 feet[1]	Usage Factor[1]
Drill Rig Truck	1	84	0.2
Ground Type		Soft	
Source Height		5	
Receiver Height		5	
Ground Factor		0.58	

Predicted Noise Level[2]	L_{eq} dBA at 50 feet[2]
Drill Rig Truck	77.0

Predicted Combined Noise Level (L_{eq} dBA at 50 feet)
77.0

Sources:
1 - Obtained from the FHWA Roadway Construction Noise Model, January 2006.
2 - Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006.
L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)
Where: E.L. = Emission Level;
U.F.= Usage Factor;
G = Constant that accounts for topography and ground effects; and
D = Distance from source to receiver.
*Project specific threshold

Project-Generated Construction Source Noise Prediction Model
Laguna Creek Diversion Retrofit - Phase 5, Vault Installation, Concrete

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold*	443	60.0
Threshold*	116	75.0
Nearest Receiving PL	114	75.2
	100	76.7
	150	72.1
	200	68.9
	250	66.4
	300	64.4
	350	62.6
	400	61.1
	450	59.8
	500	58.6

Equipment Assumptions	Qty.	Reference Emission Noise Levels (Lmax) at 50 feet[1]	Usage Factor[1]
Excavator	**1**	85	0.4
Concrete Mixer Truck	**1**	85	0.4
Pumps	**1**	77	0.5

Ground Type	Soft
Source Height	5
Receiver Height	5
Ground Factor	0.58

Predicted Noise Level[2]	L_{eq} dBA at 50 feet[2]
Excavator	81.0
Concrete Mixer Truck	81.0
Pumps	74.0

Predicted Combined Noise Level (L_{eq} dBA at 50 feet)
84.4

Sources:
1 - Obtained from the FHWA Roadway Construction Noise Model, January 2006.
2 - Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006.
L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)
Where: E.L. = Emission Level;
U.F.= Usage Factor;
G = Constant that accounts for topography and ground effects; and
D = Distance from source to receiver.
*Project specific threshold

Project-Generated Construction Source Noise Prediction Model
Laguna Creek Diversion Retrofit - Phase 6, Electrical Installation

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold*	548	60.0
Threshold*	143	75.0
Nearest Receiving PL	114	77.6
	100	79.0
	150	74.5
	200	71.3
	250	68.8
	300	66.7
	350	65.0
	400	63.5
	450	62.2
	500	61.0

Equipment Assumptions	Qty.	Reference Emission Noise Levels (Lmax) at 50 feet[1]	Usage Factor[1]
Concrete Saw	**1**	90	0.2
Excavator	**1**	85	0.4
Gradall	**1**	85	0.4
Pumps	**1**	77	0.5

Ground Type	Soft
Source Height	5
Receiver Height	5
Ground Factor	0.58

Predicted Noise Level [2]	L_{eq} dBA at 50 feet[2]
Concrete Saw	83.0
Excavator	81.0
Gradall	81.0
Pumps	74.0

Predicted Combined Noise Level (L_{eq} dBA at 50 feet)
86.8

Sources:
1 - Obtained from the FHWA Roadway Construction Noise Model, January 2006.
2 - Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006.
L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)
Where: E.L. = Emission Level;
U.F.= Usage Factor;
G = Constant that accounts for topography and ground effects; and
D = Distance from source to receiver.
*Project specific threshold

Project-Generated Construction Source Noise Prediction Model
Laguna Creek Diversion Retrofit - Phase 7, Access Stairs

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold*	325	60.0
Threshold*	85.5	75.0
Nearest Receiving PL	114	71.8
	100	73.2
	150	68.7
	200	65.5
	250	63.0
	300	60.9
	350	59.2
	400	57.7
	450	56.4
	500	55.2

Equipment Assumptions	Qty.	Reference Emission Noise Levels (Lmax) at 50 feet[1]	Usage Factor[1]
Concrete Mixer Truck	1	85	0.4
Ground Type		Soft	
Source Height		5	
Receiver Height		5	
Ground Factor		0.58	

Predicted Noise Level[2]	L_{eq} dBA at 50 feet[2]
Concrete Mixer Truck	81.0

Predicted Combined Noise Level (L_{eq} dBA at 50 feet)
81.0

Sources:
1 - Obtained from the FHWA Roadway Construction Noise Model, January 2006.
2 - Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006.
L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)
Where: E.L. = Emission Level;
U.F.= Usage Factor;
G = Constant that accounts for topography and ground effects; and
D = Distance from source to receiver.
*Project specific threshold

Project-Generated Construction Source Noise Prediction Model
Laguna Creek Diversion Retrofit - Phase 7, Install Riprap

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold*	297	60.0
Threshold*	78	75.0
Nearest Receiving PL	114	70.8
	100	72.2
	150	67.7
	200	64.5
	250	62.0
	300	59.9
	350	58.2
	400	56.7
	450	55.4
	500	54.2

Equipment Assumptions	Qty.	Reference Emission Noise Levels (Lmax) at 50 feet[1]	Usage Factor[1]
Tractor	**1**	84	0.4
Ground Type		Soft	
Source Height		5	
Receiver Height		5	
Ground Factor		0.58	

Predicted Noise Level[2]	L_{eq} dBA at 50 feet[2]
Tractor	80.0

Predicted Combined Noise Level (L_{eq} dBA at 50 feet)
80.0

Sources:
1 - Obtained from the FHWA Roadway Construction Noise Model, January 2006.
2 - Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006.
L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)
Where: E.L. = Emission Level;
U.F.= Usage Factor;
G = Constant that accounts for topography and ground effects; and
D = Distance from source to receiver.
*Project specific threshold

Project-Generated Construction Source Noise Prediction Model
Laguna Creek Diversion Retrofit - Phase 8, Startup and Testing

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold*	443	60.0
Threshold*	116	75.0
Nearest Receiving PL	114	75.3
	100	76.7
	150	72.2
	200	68.9
	250	66.4
	300	64.4
	350	62.7
	400	61.2
	450	59.8
	500	58.7

Equipment Assumptions	Qty.	Reference Emission Noise Levels (Lmax) at 50 feet[1]	Usage Factor[1]
Generator	**1**	82	0.5
Tractor	**2**	84	0.4

Ground Type	Soft
Source Height	5
Receiver Height	5
Ground Factor	0.58

Predicted Noise Level[2]	L_{eq} dBA at 50 feet[2]
Generator	79.0
Tractor	83.0

Predicted Combined Noise Level (L_{eq} dBA at 50 feet)
84.5

Sources:
1 - Obtained from the FHWA Roadway Construction Noise Model, January 2006.
2 - Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006.
L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)
Where: E.L. = Emission Level;
U.F.= Usage Factor;
G = Constant that accounts for topography and ground effects; and
D = Distance from source to receiver.
*Project specific threshold

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